Express Mail No.: EV338301374 US
Title: Dynamic Subscription and Message
Routing on a Topic Between Publishing
Nodes and Subscribing Nodes
Inventor(s): William Cullen
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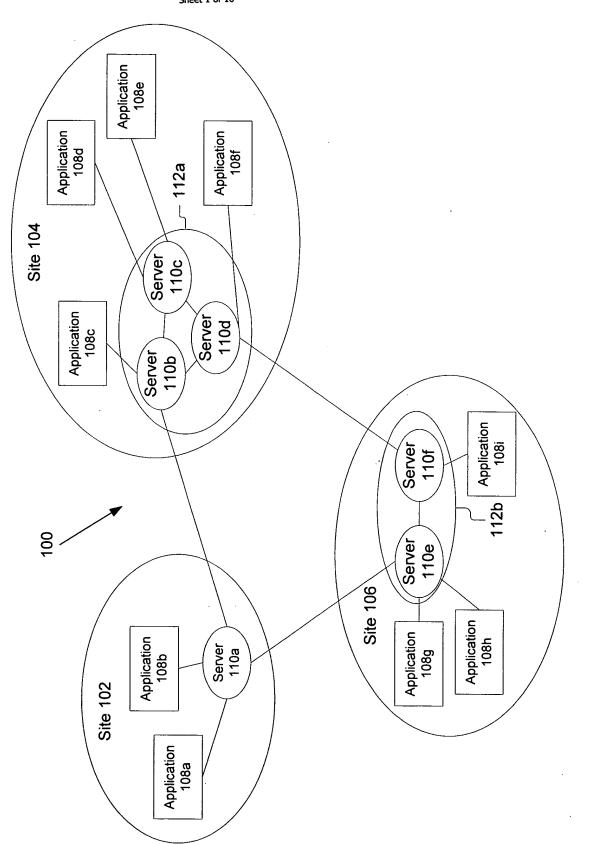


Figure 1

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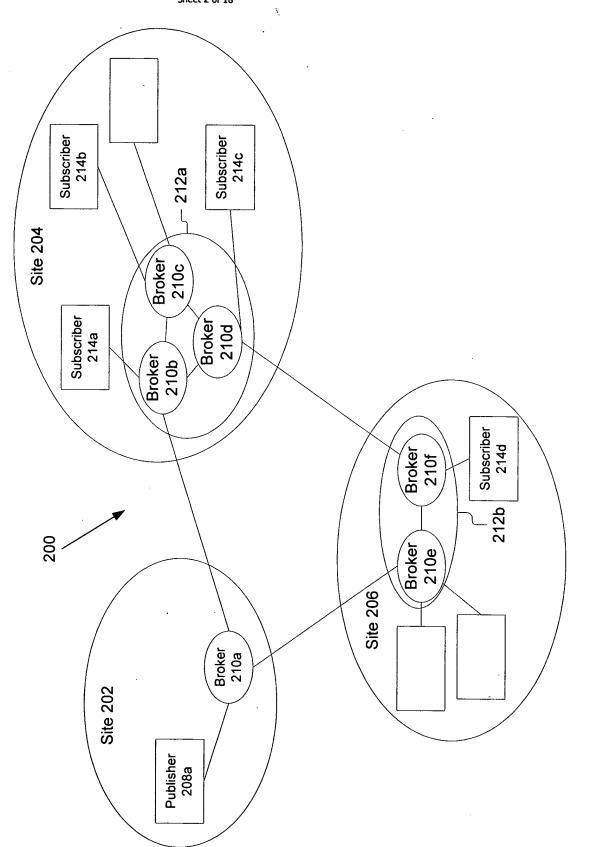


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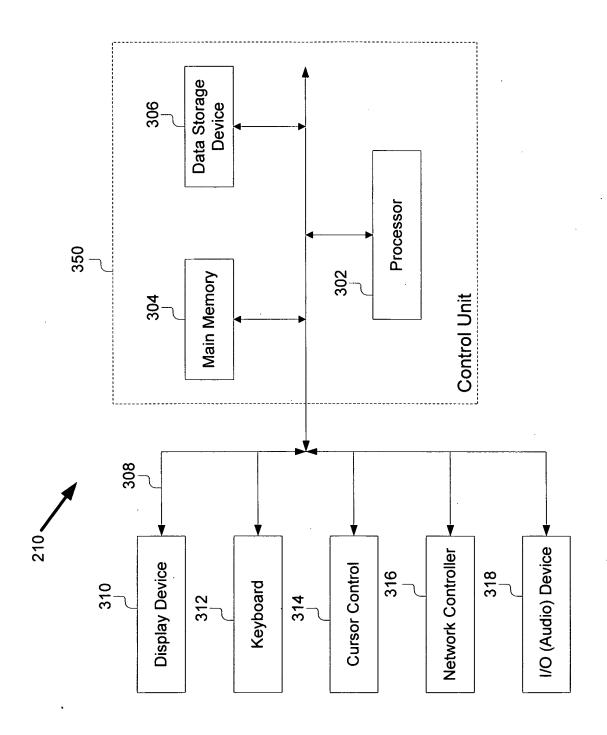


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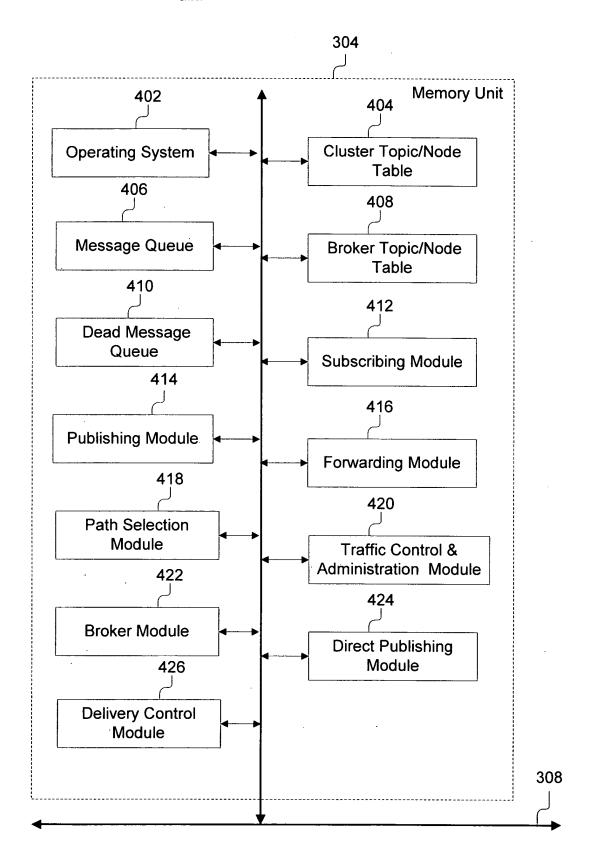


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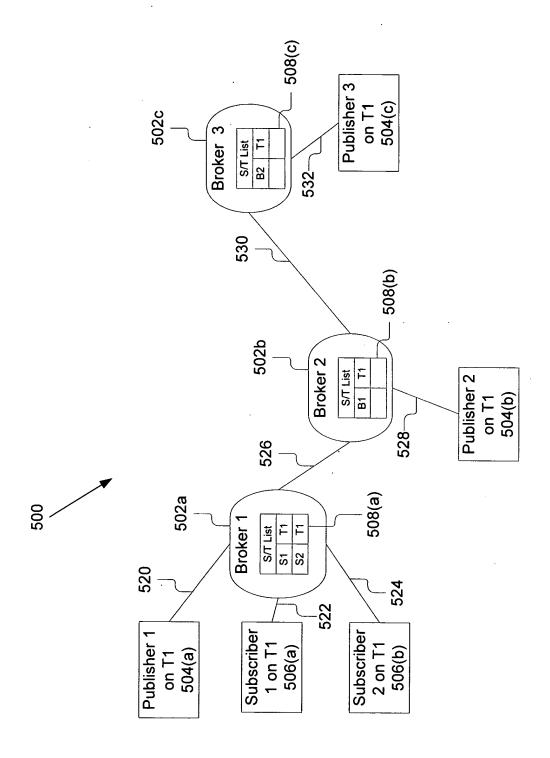
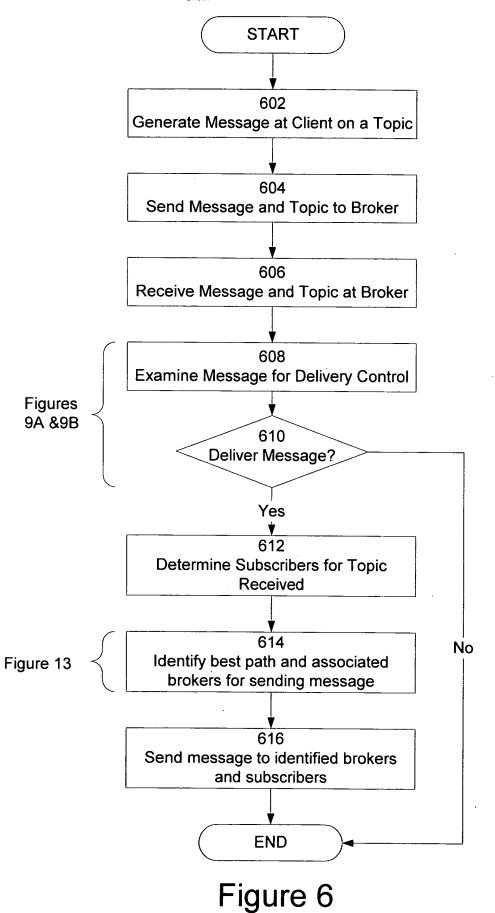


Figure 5

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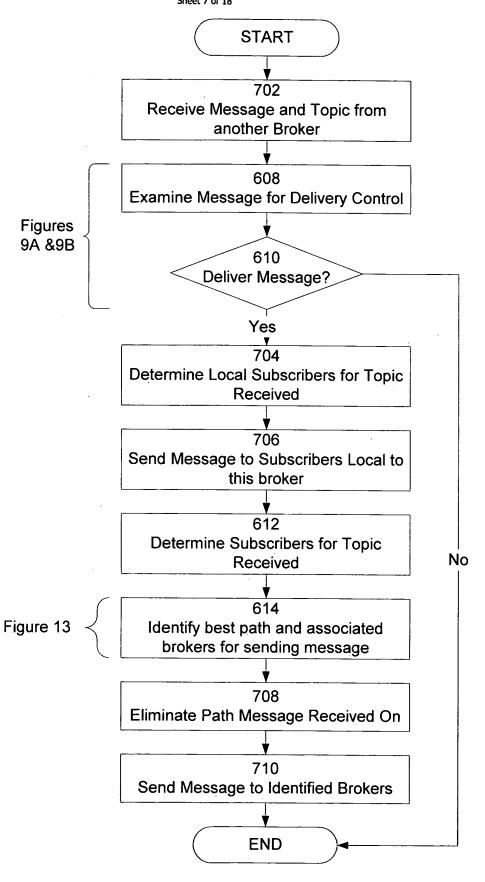


Figure 7

and Subscribing Nodes
Inventor(s): William Cullen
Atty. Docket No.: 23982-08745 Sheet 8 of 18 **START** 802 Receive Subscription Request for a Topic from Client 804 Update Broker Topic/Node Table 806 Consolidate Subscription 808 Determine if Propagation of Subscription Required 810 Propagation Required? Yes 812 Send Updated Subscription to Neighboring Node(s) 814 No Neighboring Node(s) Compares Subscription to Policy 816 Neighboring Node(s) Accepts or **Rejects Subscription END**

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Figure 8A

Title: Dynamic Subscription and Message Routing on a Topic Between Publishing Nodes and Subscribing Nodes Inventor(s): William Cullen Atty. Docket No.: 23982-08745 Sheet 9 of 18 **START** 852 Receive Request to Unsubscribe to a Topic from Client 854 Update Broker Topic/Node Table 856 Reconsolidate Subscription with Remaining Subscriptions 858 Determine if Propagation of Unsubscribe Request Required 860 Propagation Required? Yes 862 No Send Unsubscribe Request to

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Neighboring Node(s)

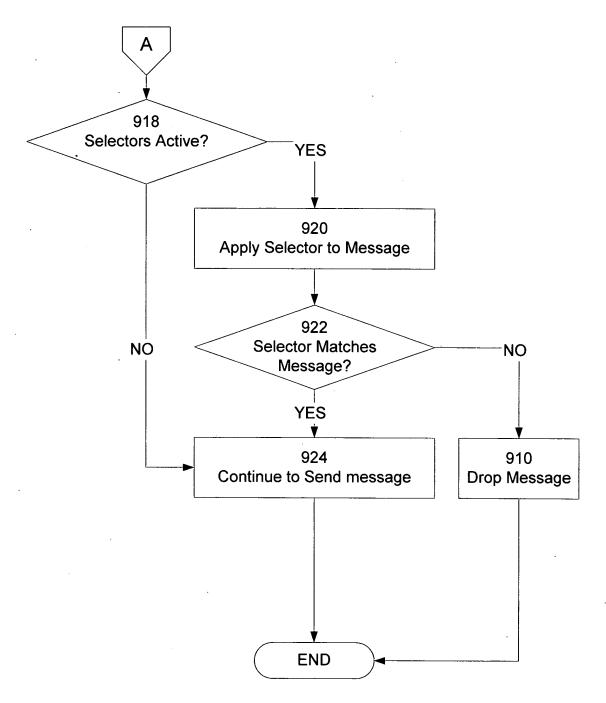
END

Express Mail No.: EV338301374 US Title: Dynamic Subscription and Message Routing on a Topic Between Publishing Nodes and Subscribing Nodes Inventor(s): William Cullen Atty. Docket No.: 23982-08745 Sheet 10 of 18 **START** 906 Check If Message a Duplicate 908 YES. **Duplicate?** NO 902 Check Permission To Publish Message 904 910 Have Permission? **Drop Message** YES 912 Check Space in Routing Queue 926 914 **Invoke Control** Check Space in Internal Buffers of Handling **Subscribers** 916 **END** Can Submit Message NO Immediately? YES

Figure 9A

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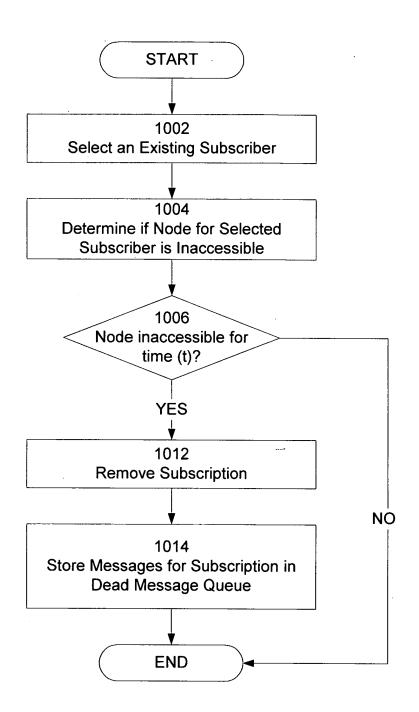


Figure 10

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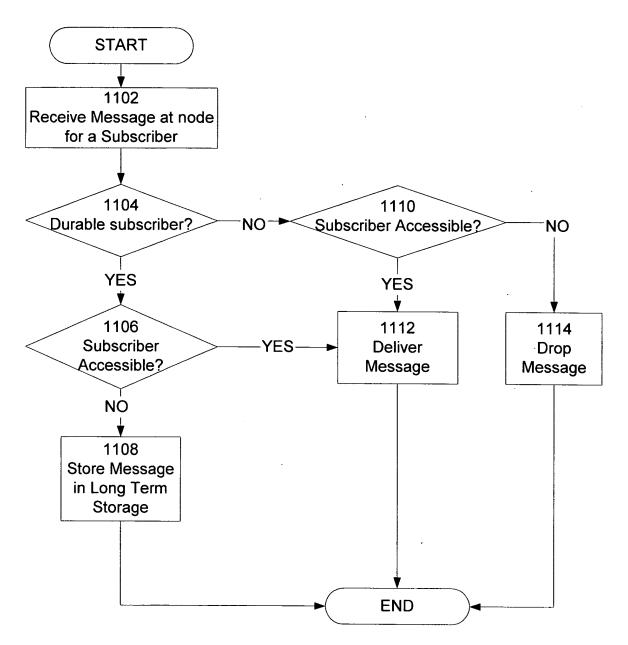


Figure 11

Atty. Docket No.: 23982-08745 Sheet 14 of 18 **START** 602 Generate Message at Client on a Topic 1202 Identify Cluster to Which to Send Message 604 Send Message and Topic to Broker 606 Receive Message and Topic at Broker 608 **Examine Message for Delivery Control Figures** 9A & 9B 610 Deliver Message? Yes 1204 Identify Best Path for Sending Message to Cluster No 1206 Send message to identified cluster **END**

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Inventor(s): William Cullen

Figure 12

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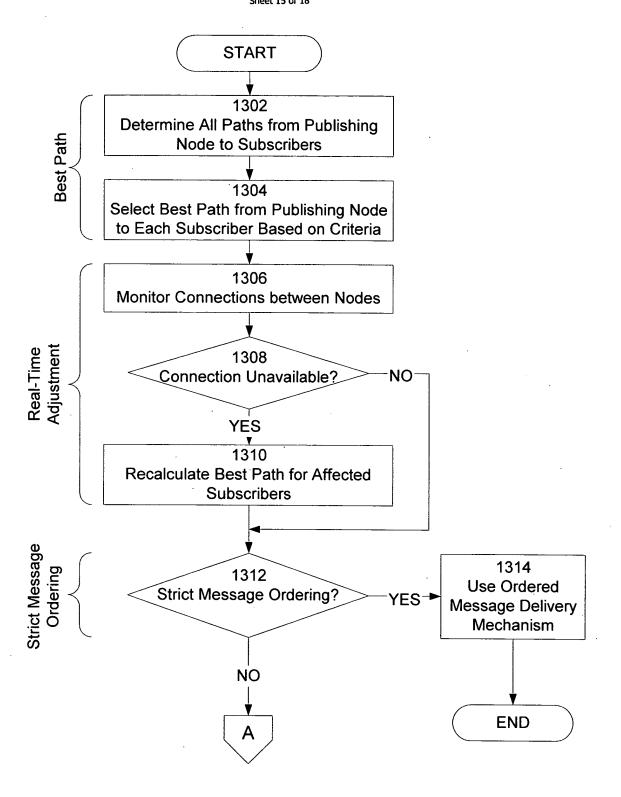
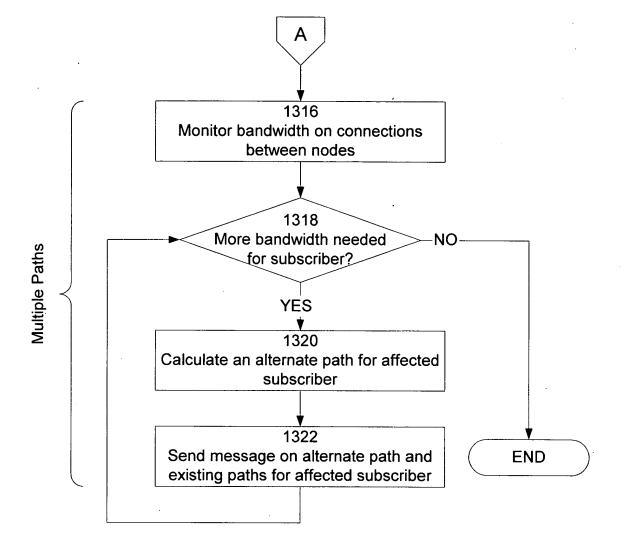


Figure 13A

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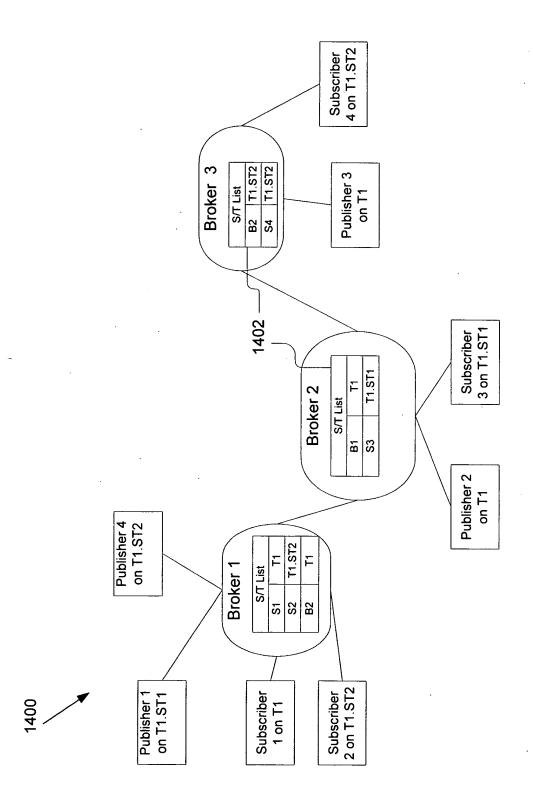


Figure 14

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